Plate 1

POTENTIAL GAS COMMITTEE

NATURAL GAS MAP OF THE UNITED STATES

December 31, 1986

1986 ESTIMATED POTENTIAL RESOURCES OF NATURAL GAS
(Trillion cubic feet-most likely estimates)

AREA	PROBABLE RESOURCES	POSSIBLE RESOURCES	SPECULATIVE RESOURCES
ATLANTIC	21.95	8.13	49.88
NORTH CENTRAL	0.19	4.11	10.32
GULF COAST	45.58	97.36	33.44
MID-CONTINENT	47.60	90.80	62.10
ROCKY MOUNTAIN	36.55	53.28	25.47
PACIFIC	1.78	15.51	15.73
TOTAL LOWER 48	153.65	269.19	196.94

WESTERN REGION

EASTERN REGION

PACIFIC

ROCKY MOUNTAIN

MID-CONTINENT

NORTH CENTRAL

GULF COAST

ATLANTIC

P-960-961 PACIFIC OFFSHORE (0-200m)SHELF (200-1000m)SLOPE

P-600 WASHINGTON

P-610 EASTERN COLUMBIA BASIN

OREGON-WASHINGTON COASTAL BASINS, OKANOGAN PROVINCE

SNAKE RIVER BASIN P-580

P-620 GREAT BASIN, SIERRA NEVADA, KLAMATH MTNS., SOUTHERN OREGON

P-640 SACRAMENTO BASIN

P-650 SAN JOAQUIN BASIN

P-660 CALIFORNIA COASTAL BASINS

P-630 SOUTHEASTERN CALIFORNIA BASINS

SWEETGRASS ARCH, CENTRAL MONTANA UPLIFT, Northern Thrust Belt

P-570

P-575 MONTANA FOLDED BELT

P-500 WILLISTON BASIN

P-515 BIG HORN BASIN

P-510 POWDER RIVER BASIN

Central Thrust Belt

WIND RIVER BASIN P-520

P-590 WYOMING-UTAH-IDAHO THRUST BELT

GREATER GREEN RIVER BASIN, HANNA-LARAMIE BASINS P-530

P-535 DENVER BASIN, CHADRON ARCH, LAS ANIMAS ARCH

Southern Thrust Belt

P-540 UINTA-PICEANCE BASIN, PARK BASINS, EAGLE BASIN

PARADOX BASIN P-550

P-545 SAN LUIS BASIN, SAN JUAN MTNS., SIERRA GRANDE UPLIFT, LAS VEGAS-RATON BASIN

P-565 PLATEAU PROVINCE, BLACK MESA BASIN

SAN JUAN BASIN P-555

P-560 SOUTHERN BASIN & RANGE PROVINCE

P-420 PALO DURO BASIN, CAPROCK-AMARILLO UPLIFT, MATADOR ARCH

P-430 FT. WORTH BASIN, BEND ARCH, OUACHITA TROUGH

P-320 EAST TEXAS BASIN

P-330 TEXAS GULF COAST BASIN

P-940-941 TEXAS OFFSHORE (0-200m)SHELF (200-1000m)SLOPE

P-935-936 LOUISIANA OFFSHORE (0-200m)SHELF (200-1000m)SLOPE

LOUISIANA-MISSISSIPPI-ALABAMA SALT BASINS

LOUISIANA GULF COAST BASIN P-310

P-930-931 EASTERN GULF COAST OFFSHORE (200-1000m)SLOPE (0-200m)SHELF

P-915-916 WEST FLORIDA OFFSHORE (0-200m)SHELF (200-1000m)SLOPE

P-140 SOUTH GEORGIA-PENINSULAR FLORIDA SEDIMENTARY PROVINCE

P-300

P-400 CENTRAL KANSAS UPLIFT, SALINA BASIN, NEMAHA ANTICLINE, SEDGWICK BASIN

P-240 WISCONSIN ARCH, SIOUX UPLIFT, IOWA SHELF

Midcontinent Rift

P-260 FOREST CITY BASIN, CHEROKEE BASIN

P-250 LINCOLN ANTICLINE, OZARK UPLIFT

P-220 ILLINOIS BASIN

P-200 MICHIGAN BASIN

P-120 APPALACHIAN BASIN

P-210 CINCINNATI ARCH

P-230 UPPER MISSISSIPPI EMBAYMENT

P-410 ARKOMA BASIN

P-150 BLACK WARRIOR BASIN

Eastern Thrust Belt

P-130 PIEDMONT-BLUE RIDGE PROVINCE

ATLANTIC COASTAL BASIN P-110

NEW ENGLAND PROVINCE, ADIRONDACK UPLIFT P-100

P-910-911 ATLANTIC OFFSHORE (0-200m)SHELF (200-1000m)SLOPE

Western Thrust Belt

The Western Thrust Belt, especially the central portion which is located along the Wyoming-Idaho border, has become a major target for exploration. Significant gas fields have been discovered in southwestern Wyoming and northern Utah. While the eastern boundary of this belt is fairly well defined by the limits of thrust faults, the western boundary is much more nebulous. Some interpretations extend the Western Thrust Belt southeastward from southern Nevada through Arizona, southeastern New Mexico, westernmost Texas and into Mexico. At the present time, the only areas within the Thrust Belt in which estimates of potential resources of natural gas have been made are the northern, central and southern portions indicated on the map. Because of lack of positive confirmation of the extension of the Thrust Belt south of Utah and the lack of data on potential source rocks, reservoir rocks and trapping mechanisms, no estimate of any potential resource of natural gas has been made for this area.

Eastern Thrust Belt

Geophysical data and resulting exploratory activity have led to the interpretation of an Eastern Thrust Belt extending from Canada southward into Georgia and Alabama. In the western portion of this belt, sedimentary rocks are exposed at the surface. In the eastern portion, sedimentary rocks are believed to exist beneath metamorphic rocks. Preliminary estimates of natural gas resources for the Eastern Thrust Belt are included in the estimates reported for the Atlantic Area.

Lower Mobile Bay Norphlet Play

Significant natural gas has been discovered in Lower Mobile Bay and the immediately adjacent federal waters in an eolian facies of the Norphlet Formation. Producing depths exceed 20,000 feet. Fields found to date are estimated to range in size from 200 Bcf to in excess of 1 Tcf. Lateral extent of the play is not completely known, but initial estimates of the resource potential have been included in the estimates for provinces P-300 and P-930.

Mid-Continent Rift

Exploration interest has been focused on the Mid-Continent Rift Zone which traverses the North Central Area from northeastern Kansas and Nebraska to northern Minnesota and Wisconsin. The feature is defined primarily on the basis of geophysical data. It is postulated that considerable thicknesses of sedimentary rocks were deposited along this tectonic trend in elongate fault-block basins which may contain potential reservoir and source rocks. The faulting which is associated with the Rift Zone may have originated in Precambrian time and have continued to affect Paleozoic sedimentation as well.

AREAS OF GAS PRODUCTION INCLUDING GAS ASSOCIATED WITH OIL

AREAS IN WHICH SEDIMENTARY ROCKS ARE EXPOSED AT THE SURFACE OR ARE PRESENT AT DEPTH AND COVERED AT THE SURFACE BY EXTRUSIVE IGNEOUS ROCKS

AREAS IN WHICH INTRUSIVE IGNEOUS ROCKS OR METAMORPHIC ROCKS ARE EXPOSED AT THE SURFACE

LIMITS OF SEDIMENTARY BASINS AS RECOGNIZED BY THE POTENTIAL GAS COMMITTEE, DASHED WHERE INFERRED

CONTOUR LINE INDICATING THICKNESS OF SEDIMENTS

Exposed Sedimentary

Concealed Sedimentary

This map prepared by Terra Graphics to accompany Potential Gas Committee report, Potential Supply of Natural Gas in the United States (December 31, 1986). Copies available from Potential Gas Agency, Colorado School of Mines, Golden, Colorado 80401. Phone (303) 279-4120.

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Plate 2

POTENTIAL GAS COMMITTEE

NATURAL GAS MAP OF ALASKA

December 31, 1986

1986 ESTIMATED POTENTIAL RESOURCES OF NATURAL GAS IN ALASKA
(Trillion cubic feet – most likely estimates)

PROBABLE – 8.99 POSSIBLE – 29.10 SPECULATIVE – 80.69

AREAS OF GAS PRODUCTION INCLUDING GAS ASSOCIATED WITH OIL

AREAS IN WHICH SEDIMENTARY ROCKS ARE EXPOSED AT THE SURFACE OR ARE PRESENT AT DEPTH AND COVERED AT THE SURFACE BY EXTRUSIVE IGNEOUS ROCKS

AREAS IN WHICH INTRUSIVE IGNEOUS ROCKS OR METAMORPHIC ROCKS ARE EXPOSED AT THE SURFACE

LIMITS OF SEDIMENTARY BASINS AS RECOGNIZED BY THE POTENTIAL GAS COMMITTEE. DASHED WHERE INFERRED

SEDIMENTARY BASINS BELIEVED NOT TO HAVE POTENTIAL FOR NATURAL GAS

CONTOUR LINE INDICATING THICKNESS OF SEDIMENTS

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P-701 NORTH SLOPE PROVINCE

P-702 BROOKS RANGE PROVINCE

P-703 YUKON FLATS-KANDIK BASIN

P-704 ALASKA INTERIOR BASINS

P-705 NORTHERN GULF OF ALASKA PROVINCE ONSHORE

P-706 SOUTHEASTERN ALASKA PROVINCE

P-707 COOK INLET/SUSITNA PROVINCE ONSHORE

P-708 ALASKA PENINSULA-BRISTOL BAY ONSHORE

P-709 ALASKA PENINSULA-BRISTOL BAY OFFSHORE

P-710 ALEUTIAN ISLANDS

P-971 BEAUFORT SEA SHELF (0-200m)

P-972 BEAUFORT SEA SLOPE (200-1000m)

P-973 CHUKCHI SHELF (0-200m)

P-974 NORTON BASIN

P-975 HOPE BASIN

P-979 ST. MATTHEW-BETHEL BASIN SHELF (0-200m)

P-980 SOUTHWEST BERING SEA SLOPE (>1000m)

P-981 NAVARIN BASIN SHELF (0-200m)

P-982 NAVARIN BASIN SLOPE (200-1000m)

P-983 ST. GEORGE BASIN SHELF (0-200m)

P-984 ST. GEORGE BASIN SLOPE (200-1000m)

P-985 BRISTOL BAY BASIN SHELF (0-200m)

P-987 SHUMAGIN-KODIAK SHELF (0-200m)

P-988 SHUMAGIN-KODIAK SLOPE (200-1000m)

P-989 ALEUTIAN SHELF (0-200m)

P-990 ALEUTIAN SLOPE (200-1000)

P-991 NORTHERN GULF OF ALASKA SHELF (0-200m)

P-992 NORTHERN GULF OF ALASKA SLOPE (200-1000m)

P-993 SOUTHEASTERN ALASKA SHELF (0-200m)

P-994 SOUTHEASTERN ALASKA SLOPE (200-1000m)

P-995 COOK INLET BASIN OFFSHORE

U.S.S.R.

CANADA (U.S.A.)

ARCTIC OCEAN

BERING SEA

PACIFIC OCEAN

CHUKCHI SEA

BEAUFORT SEA

BEAUFORT SHELF

BEAUFORT BASIN

NORTH SLOPE

BROOKS RANGE

BAIRD MTNS.

ENDICOTT MOUNTAINS

PHILIP SMITH MOUNTAINS

BRITISH MOUNTAINS

RICHARDSON MOUNTAINS

MACKENZIE MOUNTAINS

FRANKLIN MTS.

MACKENZIE BAY

HOPE BASIN

SEWARD PENINSULA

KOYUKUK BASIN

YUKON FLATS BASIN

KANDIK BASIN

NORTON BASIN

NORTON SOUND

ST. LAWRENCE ISLAND

KOYUKUK RIVER

YUKON RIVER

KUSKOKWIM MTNS.

ALASKA RANGE

TANANA BASIN

TANANA RIVER

KUSKOKWIM BAY

BETHEL BASIN

ST. MATTHEW ISLAND

NUNIVAK ISLAND

ST. PAUL ISLAND

ST. GEORGE ISLAND

ST. GEORGE BASIN

BRISTOL BAY

BRISTOL BAY BASIN

NORTH ALEUTIAN BASIN

ALASKA PENINSULA

SHELIKOF STRAIT

SHELIKOF SHELIKOF

KODIAK ISLAND

KODIAK SHELF

KODIAK BASIN

ALBATROSS BASIN

GULF OF ALASKA

GULF OF ALASKA PROVINCE

TERTIARY

STEVENSON BASIN

AFOGNAK ISLAND

TUGIDAK BASIN

TRINITY ISLANDS

CHIRIKOF ISLAND

SHUMAGIN BASIN

SHUMAGIN

SANAK BASIN

UNIMAK ISLAND

UMNAK ISLAND

UNALASKA ISLAND

ALEUTIAN ISLANDS

ALEUTIAN ISLANDS PROVINCE

NAVARIN BASIN

ZHEMCHUG BASIN

ST. GEORGE BASIN PROVINCE

ST. ELIAS MOUNTAINS

CASSIAR MOUNTAINS

KOCAY MOUNTAINS

YUKON TERRITORY

BRITISH COLUMBIA

MACKENZIE MOUNTAINS

PRINCE OF WALES ISLAND

QUEEN CHARLOTTE ISLANDS

DIXON ENTRANCE

HECATE STRAIT

CHUGACH MOUNTAINS

PRINCE WILLIAM SOUND

MIDDLETON BASIN

MONTAGUE ISLAND

YAKUTAT BASIN

EASTERN GULF OF ALASKA

YAKUTAT SHELF

BARANOF ISLAND

POINT BARROW

POINT HOPE

COLVILLE RIVER

MACKENZIE RIVER

YUKON

KUSKOKWIM

NOATAK

KOYUKUK

PORCUPINE

TANANA

KOYUKUK RIVER

YUKON RIVER

KUSKOKWIM RIVER

NOATAK RIVER

PORCUPINE RIVER

TANANA RIVER

ALEUTIAN ISLANDS

ATTU ISLAND

NEAR ISLANDS

AGATTU ISLAND

KISKA ISLAND

RAT ISLANDS

AMCHITKA ISLAND

ANDREANOF ISLANDS

TANAGA ISLAND

ADAK ISLAND

ATKA ISLAND

AMLIA ISLAND

SEGUAM ISLAND

200 METERS

1000 METERS

2